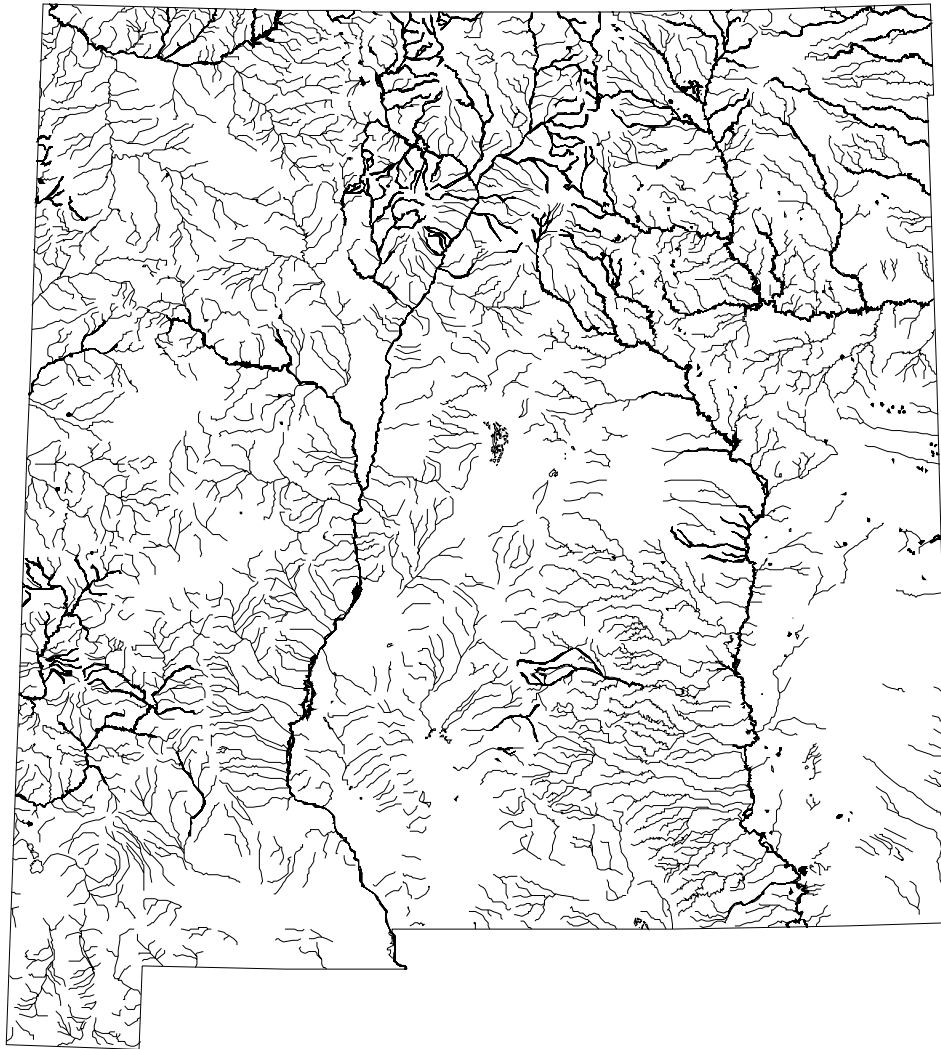


STATE OF NEW MEXICO

WATER QUALITY CONTROL COMMISSION

WATER QUALITY AND WATER POLLUTION CONTROL IN NEW MEXICO 2002



FEDERAL CLEAN WATER ACT ~ SECTION 305:

[Codified into Public Law at U.S Code, Title 33, Chapter 26, Subchapter III, Section 1315]

WATER QUALITY INVENTORY

[State reports on water quality; transmittal to Congress]

Sec. 305. (a) [Omitted] The Administrator, in cooperation with the States and with the assistance of appropriate Federal agencies shall prepare a report to be submitted to the Congress on or before January 1, 1974, which shall—

(1) describe the specific quality, during 1973, with appropriate supplemental descriptions as shall be required to take into account seasonal, tidal, and other variations, of all navigable waters and the waters of the contiguous zone;

(2) include an inventory of all point sources of discharge (based on qualitative and quantitative analysis of discharges) of pollutants, into all navigable waters and the waters of the contiguous zone; and

(3) identify specifically those navigable waters, the quality of which—

(A) is adequate to provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife and allow recreational activities in and on the water;

(B) can reasonably be expected to attain such level by 1977 or 1983; and

(C) can reasonably be expected to attain such level by any later date.

(b) (1) Each State shall prepare and submit to the Administrator by April 1, 1975, and shall bring up to date by April 1, 1976, and biennially thereafter, a report which shall include—

(A) a description of the water quality of all navigable waters in such State during the preceding year, with appropriate supplemental descriptions as shall be required to take into account seasonal, tidal, and other variations, correlated with the quality of water required by the objective of this Act [*chapter*] (as identified by the Administrator pursuant to criteria published under section 304(a) of this Act [*1314(a) of this Title*]) and the water quality described in subparagraph (B) of this paragraph;

(B) an analysis of the extent to which all navigable waters of such State provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities in and on the water;

(C) an analysis of the extent to which the elimination of the discharge of pollutants and a level of water quality which provides for the protection and propagation of a balanced population of shellfish, fish, and wildlife and allows recreational activities in and on the water, have been or will be achieved by the requirements of this Act, together with recommendations as to additional action necessary to achieve such objectives and for what waters such additional action is necessary;

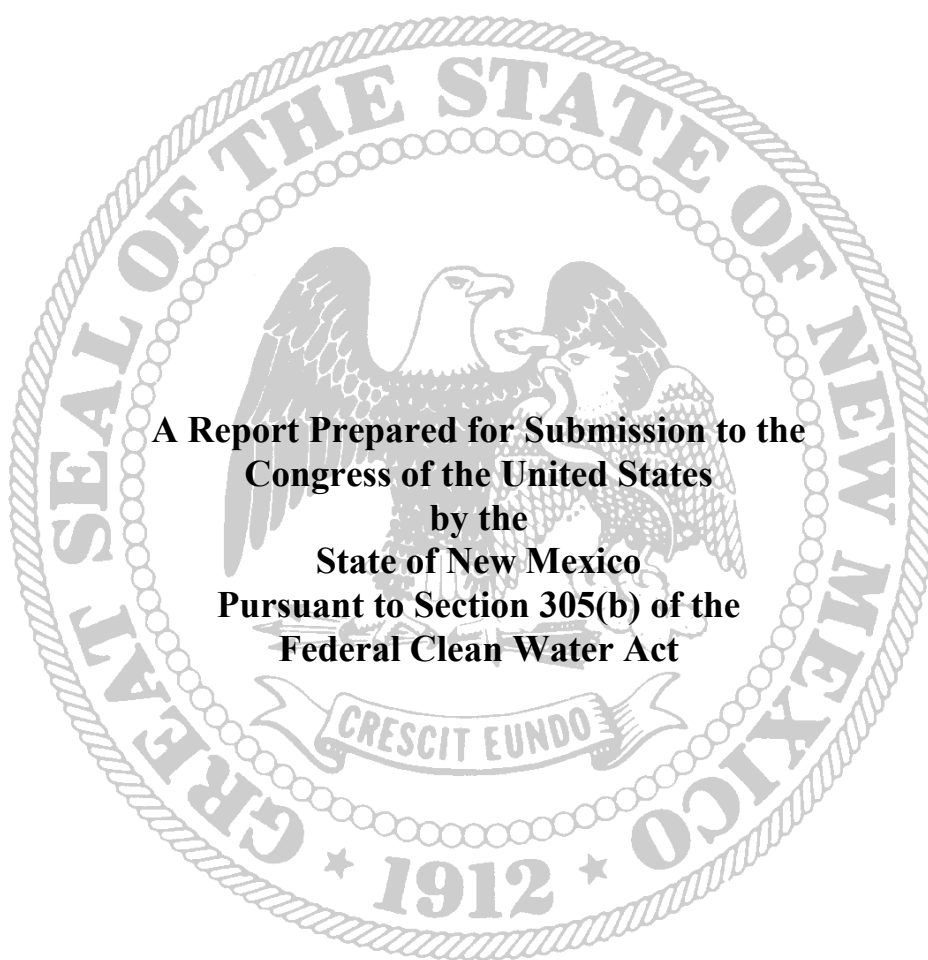
(D) an estimate of (i) the environmental impact, (ii) the economic and social costs necessary to achieve the objective of this Act in such State, (iii) the economic and social benefits of such achievement, and (iv) an estimate of the date of such achievement; and

(E) a description of the nature and extent of nonpoint sources of pollutants, and recommendations as to the programs which must be undertaken to control each category of such sources, including an estimate of the costs of implementing such programs.

(2) The Administrator shall transmit such State reports, together with an analysis thereof, to Congress on or before October 1, 1975, and October 1, 1976, and biennially thereafter.

WATER QUALITY AND
WATER POLLUTION CONTROL
IN NEW MEXICO

2002



**A Report Prepared for Submission to the
Congress of the United States
by the
State of New Mexico
Pursuant to Section 305(b) of the
Federal Clean Water Act**

New Mexico Water Quality Control Commission

**P.O. Box 26110
Santa Fe, New Mexico 87502**

Additional copies of this document are available upon request by e-mail at "mailto:gary_king@nmenv.state.nm.us", by telephone at (505) 827-2928, or by fax at (505) 827-0160. Requests can also be mailed directly c/o Gary King, Total Maximum Daily Load Development Section, Surface Water Quality Bureau, Water & Waste Management Division, New Mexico Environment Department, Harold Runnels Building N2105, 1190 St. Francis Drive, P.O. Box 26110, Santa Fe, New Mexico USA 87502. This document was originally created in Microsoft® Word™ 2000 (9.0.3821). Adobe® Acrobat™ (5.0.5) print files of individual chapters can be downloaded from the Internet at www.nmenv.state.nm.us/swqb/305b/2002/index.htm. Other electronic versions available upon request.

B L A N K P A G E

New Mexico Water Quality Control Commission

Peter Maggiore, Secretary
Environment Department

Thomas C. Turney, State Engineer
Designee: John Whipple
Office of the State Engineer and
Interstate Stream Commission

Lori Wrotenbery, Chairman
Oil Conservation Commission
Designee: William C. Olson

Thomas Trujillo, Director
State Parks Division
Designee: David Johnson

Frank A. Dubois, Secretary
Department of Agriculture
Designee: Julie Maitland

Larry Bell, Director
Department of Game & Fish

Dusty Hunt, Chairman
Soil & Water Conservation Commission
Designee: Howard Hutchinson

Peter Scholle, Director
Bureau of Mines & Mineral Resources
Designee: Lynn Brandvold

Steve Glass, Representative
Municipal – County Government

Charles M. Easterling, Member-at-Large

Conrad Keyes, Jr., Member-at-Large

Irene Juliana Lee, Member-at-Large

~ A C K N O W L E D G E M E N T S ~

The New Mexico Environment Department prepares this report, as part of its delegated responsibilities, for review and approval by the New Mexico Water Quality Control Commission. Preparation of this edition involved many people both inside and outside of the Department. The editor would like to extend his gratitude for valuable assistance in reviewing and writing the report to Haywood Martin at the Construction Programs Bureau, Bill Bartels, Julie Desai, Erik Galloway, Brian Schall and Stephen Wust at the Drinking Water Bureau, Marcy Leavitt, Dennis M^cQuillan and Jennifer Parker at the Ground Water Quality Bureau, John Kieling at the Hazardous Waste Bureau, Butch Tongate at the Solid Waste Bureau, Steve Baumgarn, Danny Davis, Jim Davis, Abe Franklin, Maxine Goad, Dave Hogge, Lorenci Kaniatobi, Bessy Muzumdar, Steve Pierce, Betsy Reed, Glenn Saums, Bill Skinner, Lynette Stevens, Neal Schaeffer and Julie Tsatsaros at the Surface Water Quality Bureau, Anna Richards at the Underground Storage Tank Bureau, as well as Tammy Gonzales and Maria Voyles at the WQCC Support Office.

Several WQCC Commissioners or their designees were instrumental in building this document. Special thanks are extended to Lynn Brandvold at the Bureau of Mines and Mineral Resources, Steve Glass, representing municipal & county governments, Howard Hutchinson and Conrad Keyes, Jr., Members-At-Large, Bill Olson at EMNRD's Oil Conservation Division, and Patricia Turney at the Interstate Stream Commission. Several others beyond those mentioned have also contributed to the report as word processors, linguists and final-content reviewers; their patient assistance is kindly remembered and gratefully appreciated.

In closing, the editor would like to extend his humble gratitude to both his family and friends for persevering in their support of him through the long months of compiling this report

Cordially,



Gary King
Editor

T A B L E O F C O N T E N T S

Citation: Federal Clean Water Act ~ Section 305(b).....	frontispiece
New Mexico Water Quality Control Commission	iii
Table of Contents	v
List of Figures	ix
List of Tables.....	ix
List of Acronyms.....	x
List of Appendices	xii
Preface.....	xv

PART I: EXECUTIVE SUMMARY AND RECOMMENDATIONS

Executive Summary/Overview.....	1
Recommendations for Ground and Surface Water Quality Management	
Recommendations to the Congress of the United States.....	4
Recommendations to the U.S Environmental Protection Agency.....	8

PART II: SURFACE AND GROUND WATER QUALITY

Chapter 1	New Mexico: A Geographical Description.....	13
	References.....	17
Chapter 2	New Mexico's Surface Water Basins	
	The Rio Grande Basin.....	19
	Upper Rio Grande.....	19
	Middle Rio Grande	20
	Lower Rio Grande	20
	Surface Water Quality Concerns in the Rio Grande Basin	21
	Ground Water Quality Concerns in the Rio Grande Basin	21
	The Arkansas/White/Red Rivers Basin.....	23
	Surface Water Quality Concerns in the Arkansas/White/Red Rivers Basin	24
	Ground Water Quality Concerns in the Arkansas/White/Red Rivers Basin	24
	The Central Closed Basins.....	24
	Surface Water Quality Concerns in the Central Closed Basins	25
	Ground Water Quality Concerns in the Central Closed Basins	26
	The Lower Colorado River Basin	26
	Surface Water Quality Concerns in the Lower Colorado River Basin.....	27
	Ground Water Quality Concerns in the Lower Colorado River Basin.....	27
	The Pecos River Basin	27
	Surface Water Quality Concerns in the Pecos River Basin	28
	Ground Water Quality Concerns in the Pecos River Basin	28
	The San Juan River Basin	29
	Surface Water Quality Concerns in the San Juan River Basin	30
	Ground Water Quality Concerns in the San Juan River Basin	31
	The Southern High Plains Basin	31
	Surface Water Quality Concerns in the Southern High Plains Basin.....	32
	Ground Water Quality Concerns in the Southern High Plains Basin.....	32
	Southwestern Closed Basins	33
	Surface Water Quality Concerns in the Southwestern Closed Basins	33
	Ground Water Quality Concerns in the Southwestern Closed Basins	34
	The Western Closed Basins	34
	Ground Water Quality Concerns in the Western Basins.....	35
	References.....	36

PART III: WATER QUALITY MANAGEMENT

Chapter 3	The State Role in Water Quality Management
Overview.....	39
Responsibilities of the Water Quality Control Commission	39
Other Programs Relevant to Water Pollution Control.....	42
References.....	44
Chapter 4	Surface Water Quality Management in New Mexico
Water Quality in Assessed Surface Waters.....	45
Methodology.....	45
Assessment Strategy	45
Stream Water Quality	48
Aquatic Life Use Support in the State's Streams	48
Individual Use Support in the State's Streams	48
Lake Water Quality.....	51
Attainment of Designated Uses and Clean Water Act Goals.....	51
Trophic Status.....	51
Lake Acidification	54
Control Methods.....	54
Causes and Sources of Water Quality Impairment	54
Streams	54
Lakes	59
Public Health/Aquatic Life Impacts.....	59
Other Water Quality Assessment Measures for Streams and Lakes	59
Water Quality Limited Segments.....	59
Water Quality Trends	59
Status of New Mexico Wetlands.....	60
Future Direction.....	60
Middle Rio Grande Ecosystem: Bosque Biological Management Plan.....	60
Programs for Surface Water Pollution Control	61
The State Role in the NPDES Program.....	61
Federal NPDES Permits.....	62
State Certification of NPDES Permits	63
State Administrative Assistance	66
Pretreatment.....	66
Present and Emerging Concerns	67
Sewage Sludge.....	67
Storm Water.....	67
Discharge of Toxic Pollutants.....	67
Contaminated Aquifer Remediation	68
Community Wastewater Facility Construction Grants/Loans.....	68
Dredge-and-Fill Program	68
State Water Quality Protection Regulations	72
Utility Operator Certification and Facility Operation	72
Certification.....	72
Training Activities	72
Facility Operations	72
Enforcement.....	73
Future Directions and Needs.....	73
State Revolving Loan Program	73
Colonias Wastewater Construction Grant Program	73
State Enforcement.....	74
Present and Emerging Concerns	74
Nonpoint Source Water Pollution Management Program.....	75
Best Management Practices.....	75
Nonpoint Source Management Program Activities	75
Statewide Efforts	75
Agriculture.....	75

Rangeland Agriculture.....	76
Silviculture	76
Resource Extraction.....	77
Hydromodification.....	77
Recreation.....	77
Road Construction and Maintenance	77
On-Site Liquid Waste Disposal	77
Consistency Reviews	77
Education and Outreach.....	78
Watching Our Waters	78
Watershed Efforts	78
Invasive Plant Control	78
Federal Programs - Environmental Oversight at Department of Energy Facilities	79
Water Quality Improvements.....	79
Surface Water Quality Assessments	80
Surface Water Quality Monitoring	80
Lake and Reservoir Monitoring	80
NMED Special Studies	81
Future Directions	81
Program Evaluation	82
Costs of Surface Water Quality Programs	82
References.....	84

Chapter 5

Ground Water Quality Management in New Mexico

Sources of Ground Water Contamination	85
Nonpoint Sources of Contamination.....	85
Household Septic Tanks and Cesspools	85
Agriculture.....	90
Point Sources of Contamination	90
Oil Field Sources	90
Refined Petroleum Product Sources	90
Nitrate Sources	90
Solvents Sources.....	90
Metals/Minerals Sources	91
Public Landfills	91
Septage Disposal	91
Programs for Ground Water Pollution Control	91
State Regulation for Ground Water Quality	91
New Mexico Water Quality Act and Water Quality Control Commission Regulations	92
20.6.2.1203 NMAC – Notification of Discharge/Removal	92
20.6.2.3000 NMAC – Permitting and Ground Water Standards.....	92
20.6.2.5000 - Underground Injection Control.....	93
Enforcement of Water Quality Control Commission Regulations.....	94
Effectiveness.....	94
New Mexico Oil and Gas Act.....	95
New Mexico Hazardous Waste Act	96
Hazardous Waste Management Regulations.....	96
Underground Storage Tank Program	97
Ground Water Protection Act	98
Emergency Management Act.....	98
New Mexico Environmental Improvement Act	99
Liquid Waste Program Regulations	99
Public Drinking Water Supply Programs.....	100
Water Supply Regulations	101
Source Water Protection: Wellhead Protection Programs	102
New Mexico Solid Waste Act.....	103
Other State Programs	103
Office of the State Engineer.....	104
State Land Office.....	104
Public Involvement.....	105

Federal Programs Related to Ground Water Quality	105
Superfund	106
Other Ground Water Quality Monitoring.....	107
County and Municipal Authorities	107
References.....	109

L I S T O F F I G U R E S

Figure	Page
1. Map of New Mexico	15
2. Water Quality Basins in New Mexico	16
3. Composition of the New Mexico Water Quality Control Commission.....	40
4. Sources of Impairment to New Mexico's Streams	55
5. Major Nonpoint Sources of Pollution in New Mexico Streams	55
6. Number of NPDES Permits in New Mexico by Year	62
7. Distribution of NPDES Facilities by Activity	62
8. Distribution of NPDES Facilities in New Mexico by Size and Type.....	63
9. Municipal NPDES Permit Age Distribution as of June 20, 2000	64
10. Municipal NPDES Permit Age Distribution as of Oct. 17, 2001	64
11. Non-Municipal NPDES Permit Age Distribution, as of June 20, 2000	64
12. Non-Municipal NPDES Permit Age Distribution, as of Oct 17, 2001	64
13. New Mexico Environment Department NPDES Permit Certificate Process.....	65
14. Number of Major Municipal NPDES Permittees in New Mexico Achieving Secondary Treatment by Year	83
15. Distribution of Administrative Penalty Orders Issued by the EPA by Amount of Penalty	83
16. Point Sources of Ground Water Contamination in New Mexico	86
17. Contaminated Water Supply Wells in New Mexico (Public & Private)	87
18. Ground Water Clean-ups in New Mexico.....	88
19. Contaminated Public and Private Water Supply Wells By Source-Type in New Mexico	89
20. Point Sources of Ground Water Contamination in New Mexico by Source-Type	89
21. All Discharge Permits with Monitoring Requirements	94
22. Location of Stream Monitoring Stations in New Mexico Sampled Regularly by the United States Geological Survey	D4

L I S T O F T A B L E S

Table	Page
1. County and Number of Reported Spills Currently Recorded In The Rio Grande Basin	23
2. Criteria for Determination of Designated and Aquatic Life Use Support	46
3. New Mexico Fishing Use Protection Numeric Water Quality Standards for Toxicants	47
4. Aquatic Life Use Support in Assessed Rivers (Units in Miles)	49
5. Individual Use Support Summary for New Mexico Rivers (Units in Miles)	50
6. Aquatic Life Use Support in Assessed Lakes (Units in Acres).....	52
7. Individual Use Support in New Mexico Lakes (Units in Acres).....	53
8. Total River Miles not Fully Supporting Designated or Attainable Uses by Cause Category.....	56
9. Total River Miles not Fully Supporting Designated or Attainable Uses by Source Category	57
10. Total Lake and Playa Acres not Fully Supporting Designated or Attainable Uses by Cause Category	58
11. Total Lake and Playa Acres not Fully Supporting Designated or Attainable Uses by Source Category.....	58
12. Current NPDES Permits in New Mexico	69 - 71
13. Special Stream Surveys, 2000-2001.....	82
14. Location of Current U.S. Geological Survey Stream Quality Monitoring Stations funded by N.M. Environment Department.....	D5
15. Parameters and STORET codes for organic chemicals analyzed during the special water quality surveys conducted in 1996 and 1997.	D6
16. Sample Types, Parameters, and STORET Codes for Environmental Measures Performed during Special Surveys Conducted by the New Mexico Environment Department.....	D7
17. Toxics Monitored in Selected Point Source Discharges, 1998.	D8

L I S T O F A C R O N Y M S

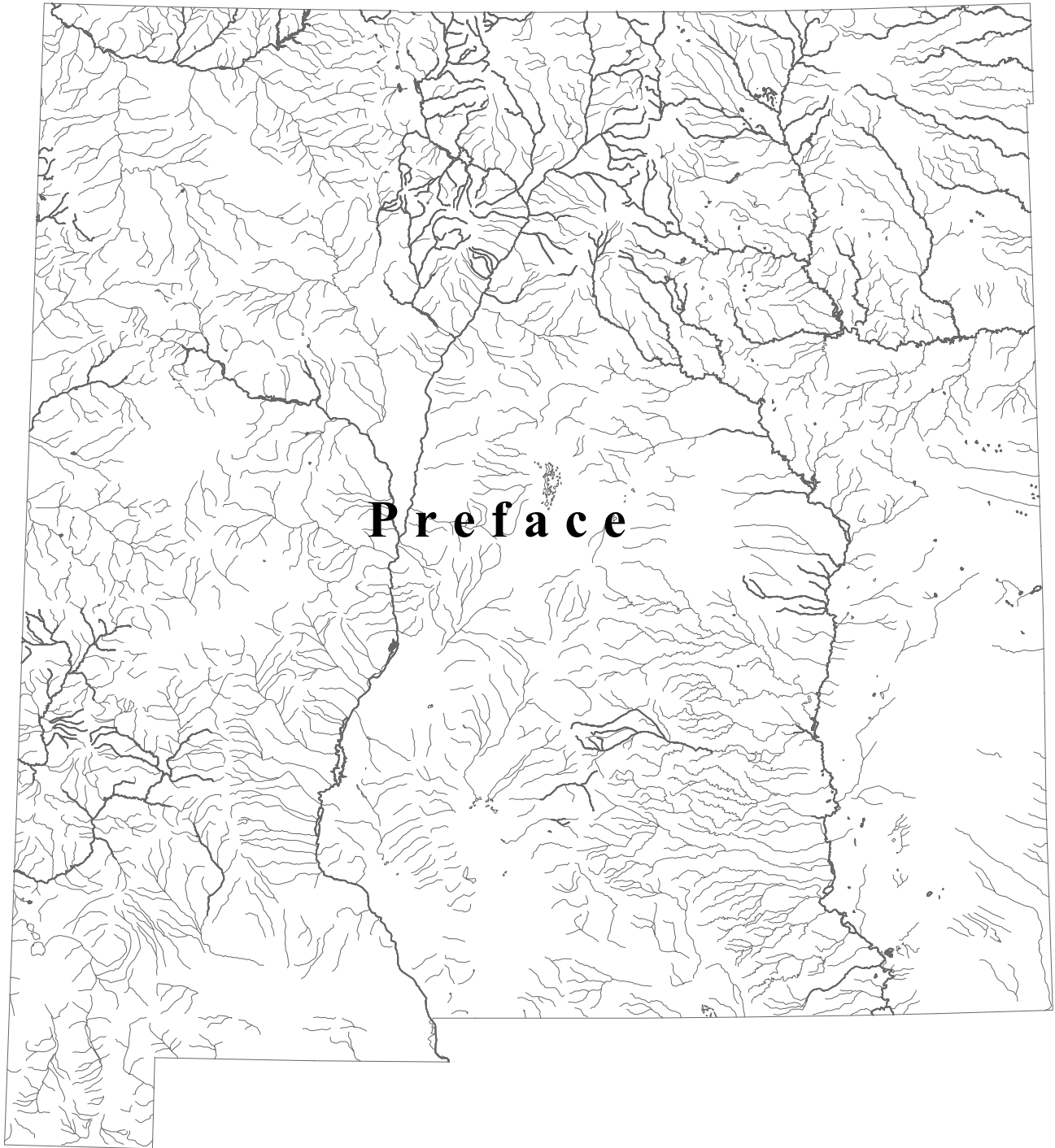
ADB	<i>Access</i> ® Database
AIP	Agreement-In-Principle
AST	Above-ground storage tank
BLM	United States Bureau of Land Management
BMMR	New Mexico Bureau of Mines and Mineral Resources
BMP	Best management practice
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CWL	Chemical Waste Landfill
COA	City of Albuquerque
COC	Constituents of Concern
CPB	Construction Programs Bureau, New Mexico Environment Department
CWA	Clean Water Act
DA	New Mexico Department of Agriculture
DGF	New Mexico Department of Game and Fish
DLG	Digital Line Graph database, an information system of the United States Geological Survey
DOD	United States Department of Defense
DOE	United States Department of Energy
DOI	United States Department of Interior
DRASTIC	<i>Depth to water; (net aquifer) Recharge; Aquifer media; Soil media; Topography; Impact on the vadose zone media; and Conductivity database of the United States Environmental Protection Agency</i>
DWB	Drinking Water Bureau, New Mexico Environment Department
EID	Environmental Improvement Division, precursor to the New Mexico Environment Department
EMNRD	New Mexico Energy, Minerals and Natural Resources Department
EPA	United States Environmental Protection Agency
ER	Environmental restoration
ET	Evapotranspiration
FU	Field unit
GIS	Geographic Information System
GWQB	Ground Water Quality Bureau, New Mexico Environment Department
IRP	Installation Restoration Project
ITRI	Inhalation Toxicology Research Institute
ISC	New Mexico Interstate Stream Commission
KAFB	Kirtland Air Force Base
LAEO	Los Alamos Area Office, United States Department of Energy
LANL	Los Alamos National Laboratories
LRRI	Lovelace Respiratory Research Institute
LUST	Leaking underground storage tank
LWDR	Liquid Waste Disposal Regulations
LWDS	Liquid Waste Disposal System
MEK	Methyl ethyl ketone
MMRD	Mining and Minerals Division
MOA	Memoranda of agreement
MODFLOW	Modular three-dimensional finite-difference ground water model software developed by the USGS
MWPP	Municipal Water Pollution Prevention Program
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFA	No Further Action
NMED	New Mexico Environment Department
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	Nonpoint source
NRCS	Natural Resource Conservation Service, United States Department of Agriculture
NRCC	Natural Resource Conservation Commission

List of Acronyms, continued.

OCC	New Mexico Oil Conservation Commission
OCD	Oil Conservation Division, New Mexico Energy, Minerals and Natural Resources Department
OSE	Office of the State Engineer
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PNM	Public Service Company of New Mexico
PPP	Pollution Prevention Plans
PRS	Potential Release Site
PSR	Point Source Regulation Section, Surface Water Quality Bureau of the New Mexico Environment Department
QA/QC	Quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation work plan
RHWMB	Radioactive and Hazardous Waste Material Bureau, New Mexico Environment Department
RN	Radionuclide
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SER	Sandia Engineering Reactor
SHTD	New Mexico State Highway and Transportation Department
SIC	Standard Industrial Classification
SNL	Sandia National Laboratories
SPD	State Parks Division, New Mexico Energy, Minerals and Natural Resources Department
STORET	STORage and RETrieval database of the United States Environmental Protection Agency
SVOC	Semi-volatile organic compound
SWA	Solid Waste Act
SWCC	Soil and Water Conservation Commission
SWCS	Soil and Water Conservation Service
SWHCP	Site-Wide Hydrogeologic Characterization Project
SWQB	Surface Water Quality Bureau, New Mexico Environment Department
SWMU	Solid Waste Management Unit
TA-	Technical Area (-integer), Los Alamos National Laboratories
TDS	Total dissolved solids
TMDL	Total maximum daily load
TSDF	Treatment, storage or disposal facilities for hazardous waste
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground storage tank
USTB	Underground Storage Tank Bureau, New Mexico Environment Department
VCM	Voluntary Corrective Measures
VOC	Volatile organic compound
WIPP	Waste Isolation Pilot Project
WHPP	Wellhead Protection Program, a function of NMED's Drinking Water Bureau
WQCC	New Mexico Water Quality Control Commission

L I S T O F A P P E N D I C E S

Appendix A	Background Information on Surface Waters	
	New Mexico Geographic Information Summary.....	A3
Appendix B	Waterbodies With Designated Uses Partially or Not Fully Supported or Fully Supported but with Threatened Designated or Attainable Uses.....	1-193
Appendix C	Fish Consumption Guidelines.....	C3
Appendix D	Surface Water Monitoring Systems Information.....	D3
	Figure 22: Location of Stream Monitoring Stations in New Mexico Sampled Regularly by the United States\ Geological Survey	D4
	Table 14: Location of Current United States Geological Survey Quality Monitoring Stations funded by the New Mexico Environment Department	D5
	Table 15: Parameters and STORET Codes for Organic Chemicals Analyzed During the Special Water Quality Conducted in 1996 and 1997	D6
	Table 16: Sample Types, Parameters, and STORET Codes for Environmental Meas- urements Performed during Special Surveys Conducted by the New Mexico Environment Department	D7
	Table 17: Toxics Monitored in Selected Point Source Discharges, 1998	D8
Appendix E	Summary of New Mexico State and Local Government Authorities to Control Pollution of Ground and Surface Waters	E3



B L A N K P A G E

PREFACE

This report is designed to satisfy the statutory requirements of § 305(b) of the federal Water Pollution Control Act [33 U.S.C. 1288], commonly known as the Clean Water Act (CWA). It also serves as a source of basic information on water quality and water pollution control pro-

grams in New Mexico. Accordingly, the intended audience includes the general public, interest groups, consultants, state legislators, governmental agencies at State, local, and federal levels, as well as universities and other educational entities.

State and federal agencies, statutes, regulations, and programs are distinctly identified within the various aspects of water pollution control management as required by the context.

Legal Requirements

CWA § 305(b) (1) requires that each State submit a biennial report to the United States Congress through the United States Environmental Protection Agency (USEPA). The report is to include the following:

- an assessment of water quality;
- an analysis of the extent to which surface waters provide for protection and propagation of fish, shellfish, and wildlife and recreation in and on the water;
- an overview of progress in water pollution control and recommendations for further action;
- an estimate of the environmental, so-

cial, and economic impacts of restoring and maintaining the chemical, physical, and biological integrity of waters within the State; and

- a description of the nature of nonpoint source pollution and of programs for nonpoint source pollution control.

This report contains three parts. Part I contains the *Executive Summary* and *Recommendations*. The executive summary focuses on water quality and water pollution control management results, highlighting major points made in the report. The recommendations from the New Mexico Water Quality Control Commission are addressed to both the

United States Congress and the USEPA.

Part II, *Surface and Ground Water Quality*, provides a basin-by-basin narrative on current pollution problem areas and efforts to remediate them. This part of the report also outlines the State's concerns of both its ground and surface water resources.

The final part of this report, *Water Quality Management*, details the work of many agencies within the State entrusted with protecting New Mexico's water resources.

Information Used

This report generally deals with the period from January 2000 through December 2001.

B L A N K P A G E